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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/964,639	09/28/2001	Dong-Gyu Kim	6192.0186.AA	1991

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EXAMINER

CHOWDHURY, TARIFUR RASHID

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 04/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/964,639

Applicant(s)

KIM, DONG-GYU

Examiner

Tarifur R Chowdhury

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-26 and 36-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14-26 and 41 is/are allowed.
- 6) ☒ Claim(s) 36-40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 36-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawatsubashi et al., (Sawatsubashi), USPAT 5,148,301.**

3. Sawatsubashi discloses and shows in Fig. 3, a display device, comprising:

- a first substrate having a plurality of gate lines (G1-Gm) and a plurality of
- data lines (D1- Dn);

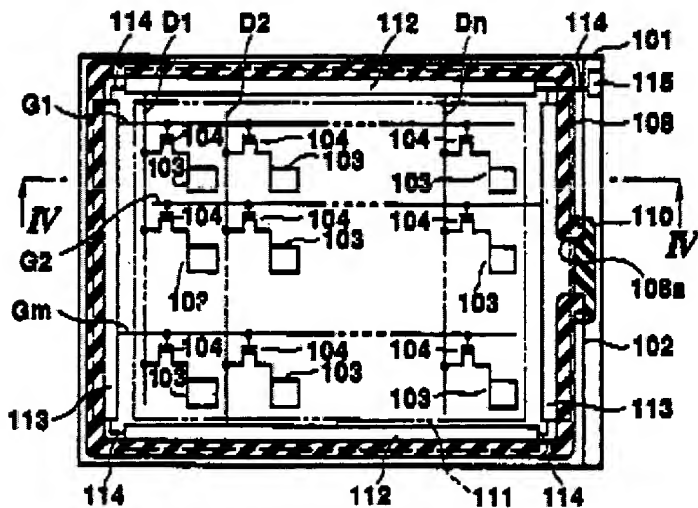


FIG. 3

- a plurality of thin film transistors (104) electrically connected to the gate lines and the data lines;
- a plurality of pixel electrodes (103) electrically connected to the thin film transistors respectively;
- a plurality of gate driving ICs (113) to output gate signals to the gate lines;
- a plurality of data driving ICs (112) to output data signals to the data lines; and
- a plurality of signal lines (114) (applicant's interconnection lines) apply gate control signals to at least one of the gate driving ICs (145) (col. 5, lines 1-16).

Sawatsubashi also discloses that his invention is related to a liquid crystal display device wherein the display device includes an upper substrate, a lower substrate, and an interposed liquid crystal therebetween (col. 2, lines 39-63).

Sawatsbashi differs from the instant invention because he does not explicitly disclose the claimed black matrix overlapping at least one of the interconnection lines.

It is common and known in the art to form black matrix on a substrate opposite to the substrate where the gate lines and the data lines are formed and outside the display area (interconnection lines are typically formed outside the display area) so that it overlaps the interconnection lines in order to prevent light leakage and thus improve display quality.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the display device of Sawatsbashi by forming

a black matrix such that it overlaps the interconnection lines so that light leakage is prevented and display quality is improved.

Accordingly, claim 36-38 would have been obvious.

As to claims 39 and 40, Sawatsbashi also shows in Fig. 5 and discloses (col. 5, lines 16-31) that the display device further comprising a driving signal transmission film wherein at least one of the data driving ICs is mounted on the driving signal transmission film and that the driving signal transmission film outputs the gate control signals and the data signals to the interconnection lines and the data lines respectively.

Allowable Subject Matter

4. Claims 14-26 and 41 are allowed.

5. As to claim 14, the prior arts of record do not anticipate or render obvious to one skilled in the art a liquid crystal display device comprising various elements as claimed, more specifically second contact holes exposing the respective signal lines with a predetermined width, the second contact hole having a lateral side bordering on the signal line, the lateral side of the second contact hole having a length greater than the width of the second contact holes and pixel electrodes and subsidiary signal pads standing in the same plane, the pixel electrodes being connected to the drain electrode, the subsidiary signal pads being connected to the signal lines, including all other recitations.

As to claim 41, the prior arts of record do not anticipate or render obvious to one skilled in the art a liquid crystal display comprising various elements as claimed, more specifically wherein one of the gate control signals is connected to at least one of the

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plurality of interconnection lines via a contact hole having a lateral side bordering the gate control signal and a length of the lateral side being longer than a width of the contact hole, including all other recitations.

Response to Arguments

6. Applicant's arguments filed on 01/20/04 have been fully considered but they are not persuasive.

Applicant's argument that the implementation of the black matrix as claimed in the instant invention provides advantages such as improved performance by decreasing the line resistance is irrelevant since limitations such as the black matrix overlapping at least one of the interconnection lines *for widening the interconnection lines resulting in decrease of the line resistance* is not claimed.

It should be noted that, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Therefore, the rejection is proper and thus maintained.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

8. USPAT 5,914,758 discloses a liquid crystal display device wherein the black matrix overlaps the interconnection lines.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

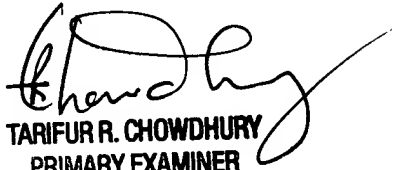
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tarifur R Chowdhury whose telephone number is (571) 272-2287. The examiner can normally be reached on M-Th (6:30-5:00) Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TRC
April 13, 2004



TARIFUR R. CHOWDHURY
PRIMARY EXAMINER